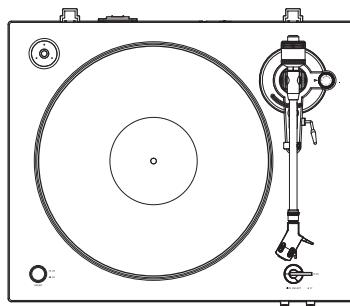


Pioneer

Service Manual



ORDER NO.
RRV4591

STEREO TURNTABLE

PL-30-K

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PL-30-K	CUXESM	AC 120 V	
PL-30-K	SYXE8	AC 220 V to 240 V	



PIONEER CORPORATION 1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan

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SAFETY INFORMATION



This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

■ **Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING

B This product may contain a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

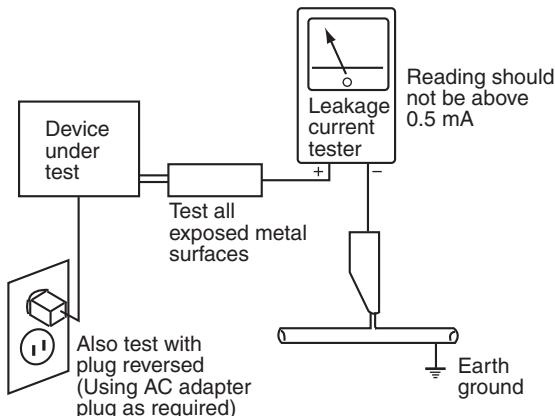
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120 V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit. Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
 - GYP1006 1.0 in dia.
 - GYP1007 0.6 in dia.
 - GYP1008 0.3 in dia.

2. SPECIFICATIONS

A	Power requirements.....	AC 120 V, 60 Hz (CUXESM) AC 220 V to 240 V, 50 Hz/60 Hz (SYXE8)
	Power consumption	2 W
	Main unit weight.....	5.6 kg (12.3 lb)
	Max. dimensions.....	435 mm (W) x 110 mm (H) x 372.6 mm (D) (17 3/16 in. (W) x 4 6/16 in. (H) x 14 11/16 in. (D))
	Tolerable operating temperature.....	+5 °C to +35 °C (+41 °F to +95 °F)
	Tolerable operating humidity.....	5 % to 85 % (no condensation)

Turntable part

Drive method	Belt drive system
Motor	DC servo motor
Rotation speed	33 1/3 rpm, 45 rpm
Wow and flutter.....	0.1 % or less WRMS (JIS WTD)
S/N ratio.....	60 dB (DIN-B)
Turntable.....	Aluminum die-casting

Tone arm part

Arm type	Static balance straight type tone arm
Effective length	221.5 mm
Overhang.....	19 mm
Stylus pressure variable range	0 g to 4.0 g (1 scale 0.1 g)
Proper cartridge weight	4.5 g to 9.5 g (single cartridge)
Cartridge type.....	MM type
Headshell weight	10.0 g (including screws and nuts)

Output voltage

C	PHONO	2.5 mV
	LINE.....	150 mV

■ Accessories

- Turntable
(200-F703-203)
- Turntable sheet
(705-PL30-1581)
- Dust cover with removable hinges
(701-PL30-5537)
- Adapter for EP record
(100-H910-264)
- Balance weight
(702-PL30-087)
- Headshell with cartridge
(Refer to "9.1 PACKING SECTION".)
- Spare lead wires
(704-30-B034)
- Power cord
(CUXESM: 409-30-233)
(SYXE8: 409-30-234)
- Operating instructions
(CUXESM: 502-PL30KA-3431)
(SYXE8: 502-PL30KB-3432A)
- Warranty card (SYXE8 only)

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

Items to be checked after servicing

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedures	Check points
1	Confirm whether the customer complain has been solved.	The customer complain must not be reappeared. Audio and operations must be normal.
2	Check playback operations.	The turntable must turn or stop properly when the START and STOP buttons is pressed. The tone arm must move properly when the lifter lever is moved up or down.
3	Check the Equalizer switch and output signals.	Play a record back and check that the audio output from the RCA output terminals are normal. When Equalizer switch is changed, output signal level should be changed to appropriate signal level.
4	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio.

Item to be checked regarding audio	
Distortion	Volume too high
Noise	Volume fluctuating
Volume too low	Sound interrupted

3.2 JIGS LIST

Jigs List

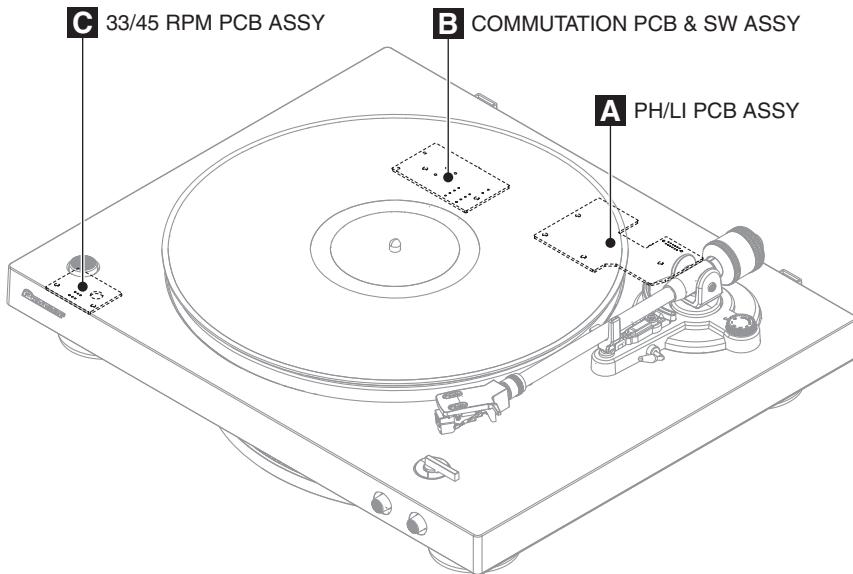
Jig Name	Part No.	Purpose of use / Remarks
Position setting jig for Speed braker Assy	GGF1688	Refer to "7. DISASSEMBLY_[2-2] Assembling to Tone arm Assy".
LP record or EP record	(Marketed product)	For checking playback operations and the audio output from the PHONO OUT terminals

Lubricants and Glues List



Name	Part No.	Remarks
Slicon bond	GYA1011	Refer to "7. DISASSEMBLY".
Adhesive	GYL1001	Refer to "7. DISASSEMBLY", "9.2 EXTERIOR SECTION".
Grease	GEM1101	Refer to "9.2 EXTERIOR SECTION".
Grease	GEM-002	Refer to "9.2 EXTERIOR SECTION".

3.3 PCB LOCATIONS



NOTES: • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 • The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

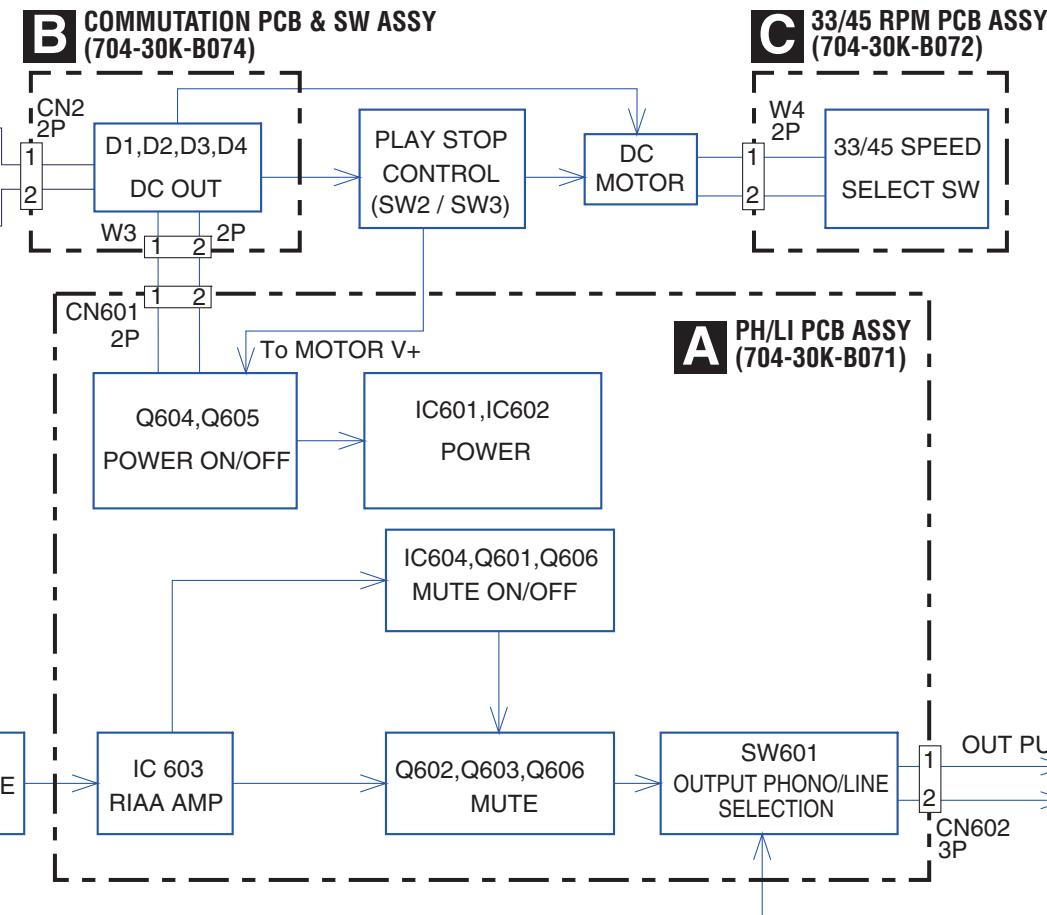
Mark No.	Description	Part No.
LIST OF ASSEMBLIES		

1..PH/LI PCB ASSY	704-30K-B071
1..COMMUTATION PCB & SW ASSY	704-30K-B074
1..33/45 RPM PCB ASSY	704-30K-B072

4. BLOCK DIAGRAM

4.1 OVERALL BLOCK DIAGRAM

A



B

C

D

E

5. DIAGNOSIS

There is no information to be shown in this chapter.

F

6. SERVICE MODE

There is no information to be shown in this chapter.

7. DISASSEMBLY

Note:

Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

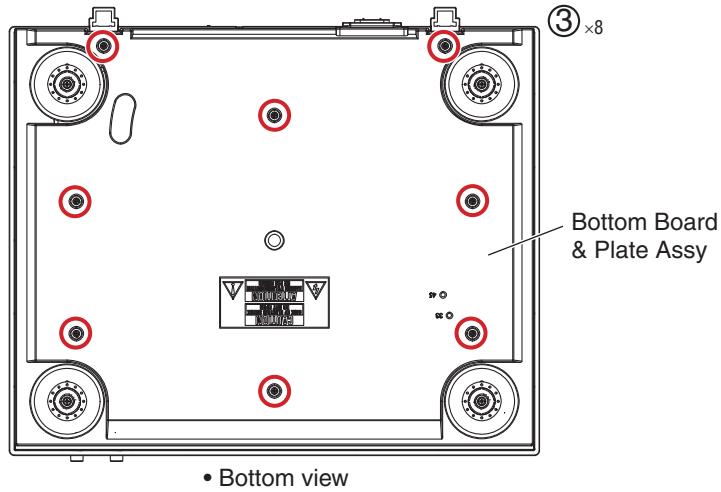
Before disassembly, be sure to turn the unit off and place the tone arm on the arm rest. Remove the cartridge then temporarily secure the tone arm on the arm rest with a piece of tape, etc. (The tone arm must be placed in a position where it will not move even if the turntable is rotated.)

Disassembly for each Assemblies

[1] PH/LI PCB Assy and COMMUTATION PCB & SW Assy

[1-1] Exterior Section

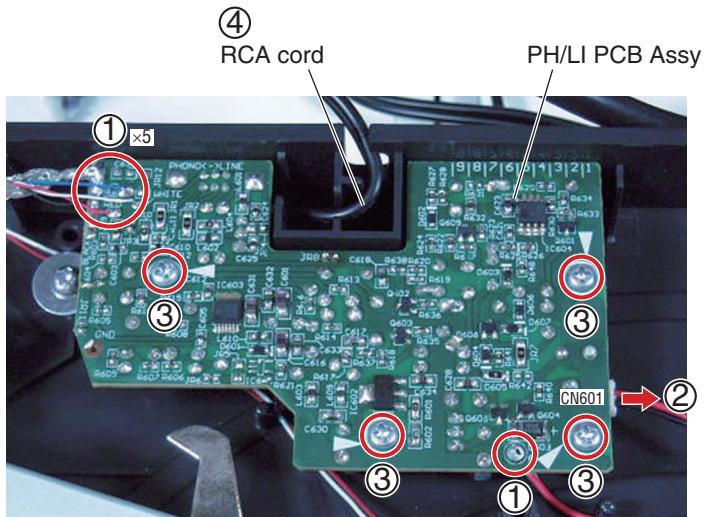
- (1) Remove the Turntable sheet and Turntable.
- (2) Turn the unit upside down with the dust cover attached.
- (3) Remove the Bottom Board & Plate Assy by removing the 8 screws.
(602-B600-072-HA)



• Bottom view

[1-2] PH/LI PCB Assy

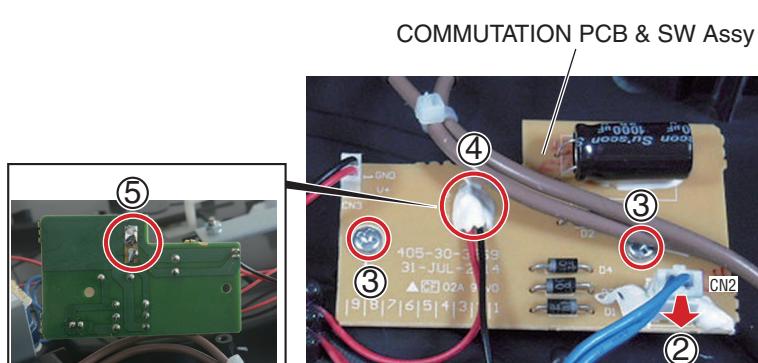
- (1) Remove the 6 solders.
- (2) Disconnect the 1 connector.
(CN601)
- (3) Remove the PH/LI PCB Assy by removing the 4 screws.
(602-B600-072-HA)
- (4) Remove the RCA cord.



• Bottom view

A [1-3] COMMUTATION PCB & SW Assy

- (1) Disconnect the 1 connector on the PH/LI PCB Assy.
(CN601)
- (2) Disconnect the 1 connector.
(CN2)
- (3) Remove the COMMUTATION PCB & SW Assy by removing the 2 screws.
(602-B600-072-HA)
- (4) Remove the silicon bond.
(GYA1011)
- (5) Remove the 2 jumper wires by removing the solder.



• Bottom view

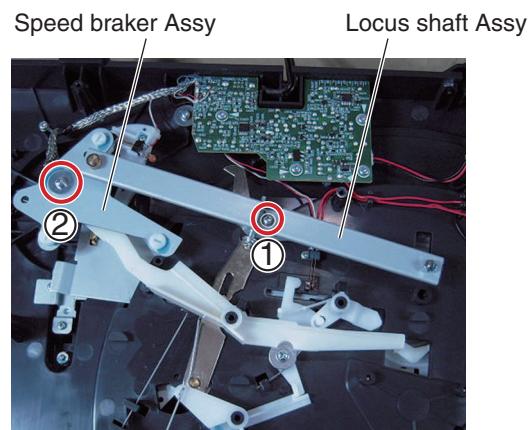
Note:

During reassembly, after soldering the lead wires, apply silicone adhesive (GYA1011).

C [2] Tone arm Assy

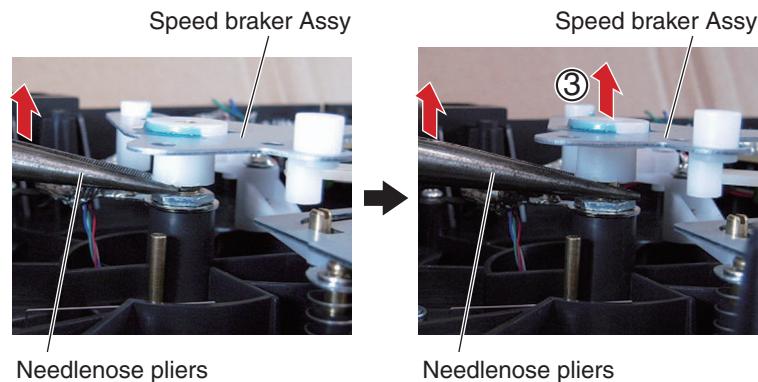
[2-1] Disassembly for Tone arm Assy

- (1) Remove the Locus Shaft Assy by removing the 1 screw.
(602-SL24F-094)
- (2) Remove the 1 screw.
(602-SL24F-095)



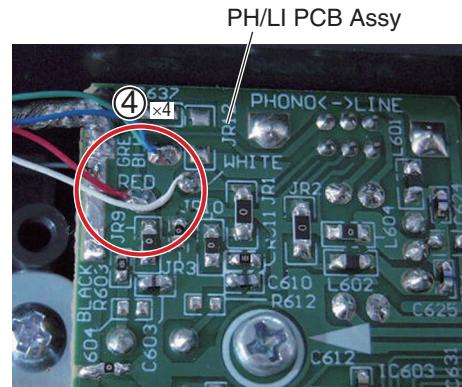
• Bottom view

- (3) Apply the tip of needlenose pliers (or a similar tool) to the joint between the shaft of the Tone Arm Assy and the Speed Braker Assy then remove the Speed Braker Assy, by prying the pliers up and at the same time inserting the tip of the pliers into the gap, gradually widening the gap.

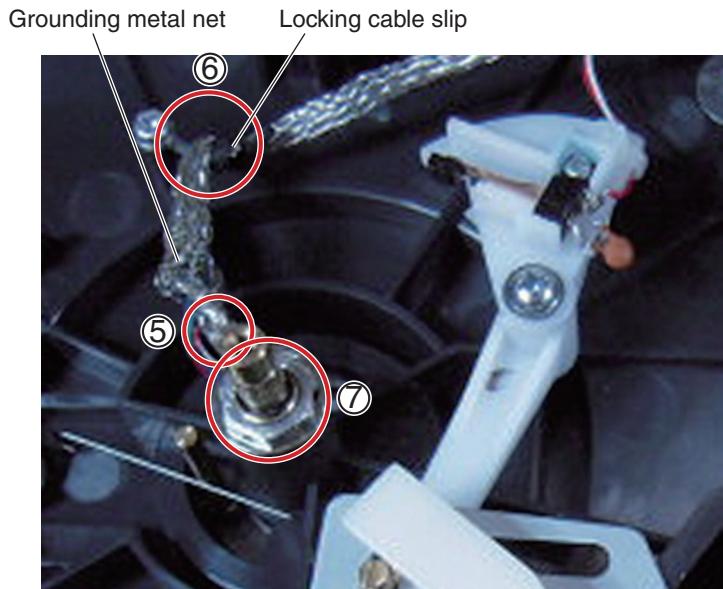


Needlenose pliers

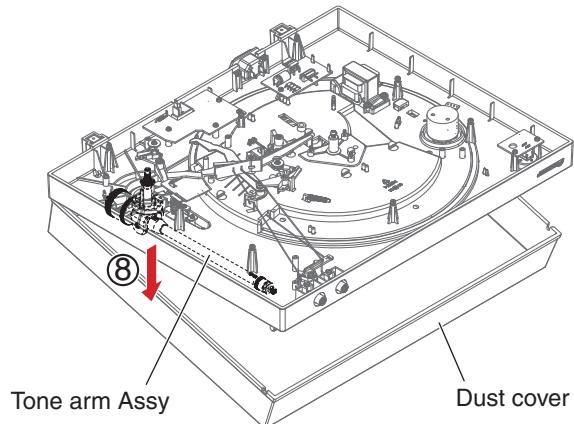
(4) Remove the 4 solders.



- (5) Remove the Grounding metal net from washer by removing the solder.
- (6) Release the signal line jumper with Grounding metal net then release the locking cable clip.
- (7) Remove the nut which holds shaft of Tone arm Assy.



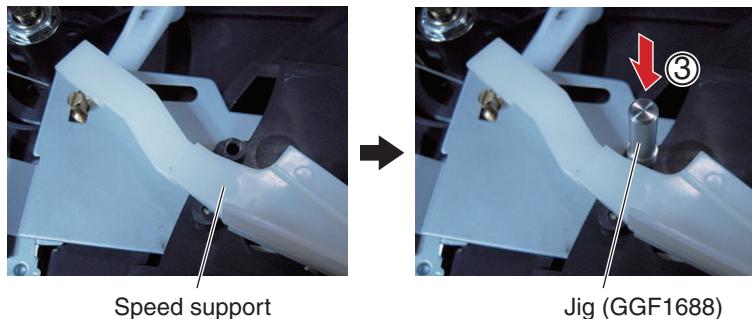
- (8) Open the dust cover a little then remove the Tone Arm Assy from between the unit and the dust cover. Be careful not to cut the signal cables.



A [2-2] Reattachment of the Tone Arm Assy

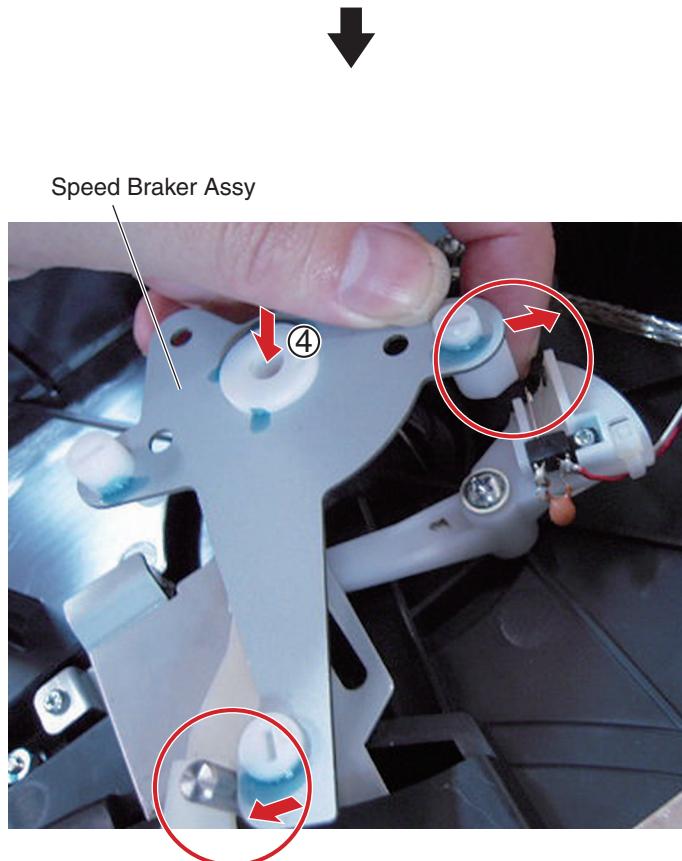
During reassembly of the Tone Arm Assy, it is necessary to properly position the Speed Braker Assy. If its positioning is improper, the arm cannot land on a proper position at the start of playing. Be sure to reattach it properly, following the procedure described below.

- (1) Reattach the Tone Arm Assy, insert the washer then secure it with the hexagonal nut.
- (2) Solder the signal cables from the Tone Arm Assy to the corresponding pads of the PH/LI PCB Assy. Solder the grounding metal net to the washer.
- (3) Insert the jig (GGF1688) into the hole near the Speed support.



C

- D (4) Insert the Speed Braker Assy into the shaft of the Tone Arm Assy. Be sure to place the Speed Braker Assy so that the end of its longer portion is in contact with the jig. Be sure to insert the Speed Braker Assy, by setting apart SW3 of the COMMUTATION PCB & SW Assy with your finger, in order to prevent SW3 from being warped.

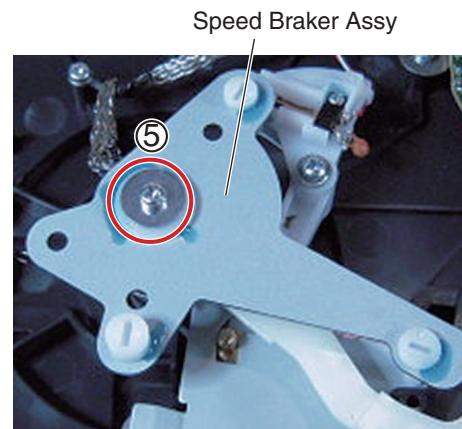


Place the Assy at the position where its end is in contact with the jig.

E

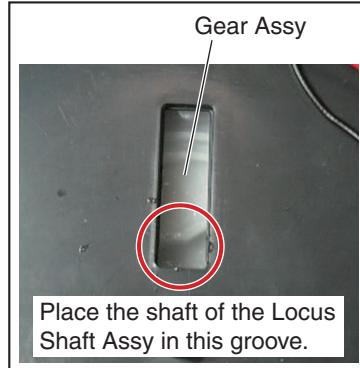
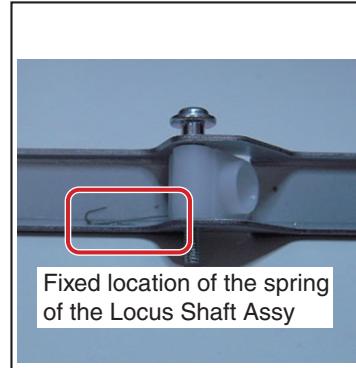


(5) Push the Speed Braker Assy down fully, insert the washer, secure it with the screw, then apply adhesive (GYL1001) for locking. Then remove the jig.

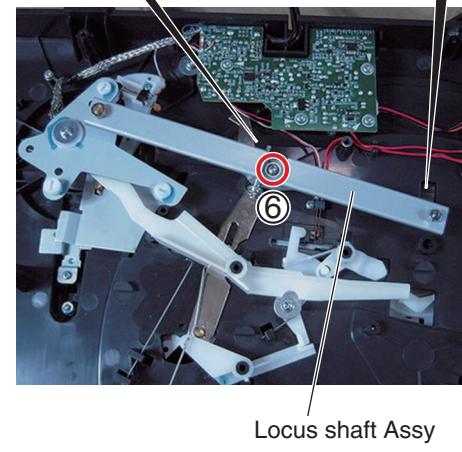


A

(6) After making sure that the spring at the center of the Locus Shaft Assy is properly set, attach the Assy so that the shaft at its end is placed in the groove of the Gear Assy then secure it with the screw.



C



D

Locus shaft Assy

E

8. EACH SETTING AND ADJUSTMENT

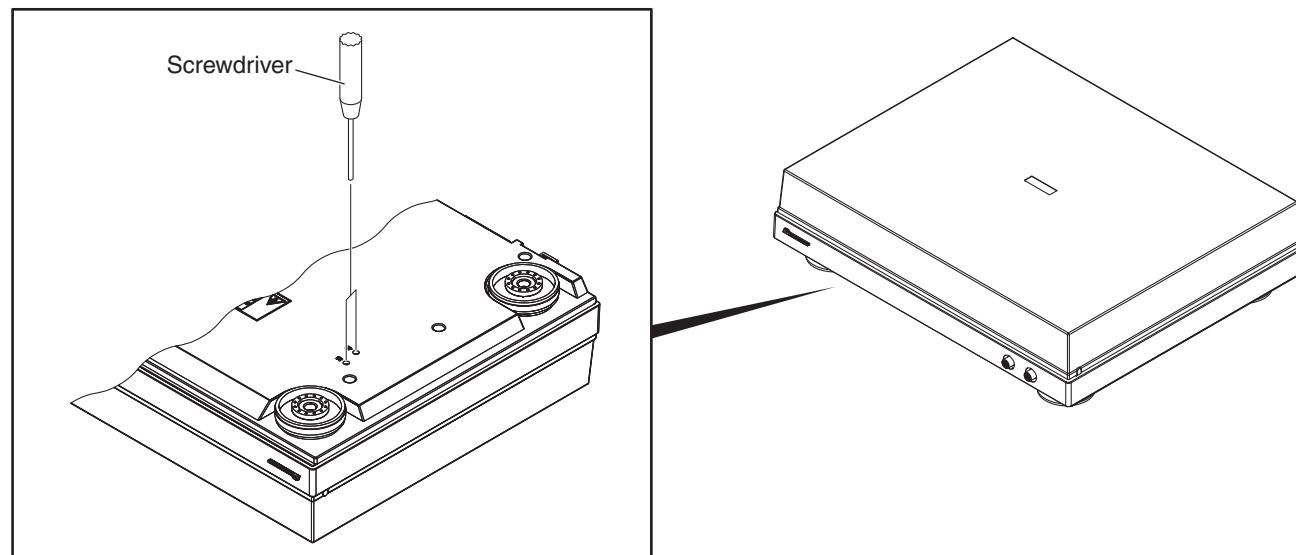
A When you exchange MOTOR Assy, please execute SPEED ADJUSTMEMNT.

8.1 SPEED ADJUSTMENT

- (1) Press the SPEED button to the 33 rpm speed.
- (2) Press the START button to play the track for 33 rpm of test record.
- (3) Insert a screwdriver into the "33 hole" of the motor, adjust the VR to get the speed value and W&F value from the jitters meter, the speed value must in the range of 2940 - 3090 Hz and the W&F value is 0.2 %.
- (4) Press the SPEED button to the 45 rpm speed.

B (5) Press the START button to play the track for 45 rpm of the test record.

- (6) Insert a screwdriver into the "45 hole" of the motor, adjust the VR to get the speed value and W&F value, the range of speed value 2900 - 3090 Hz and the W&F value is 0.2 %.
- (7) Reset the speed value and W&F value of 33 rpm again.



E

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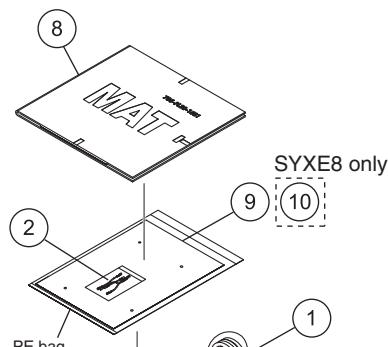
9. EXPLODED VIEWS AND PARTS LIST

NOTES:

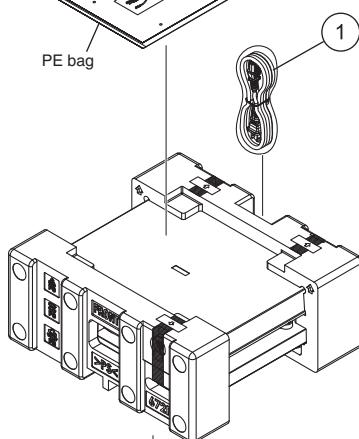
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to  mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

■ 9.1 PACKING SECTION

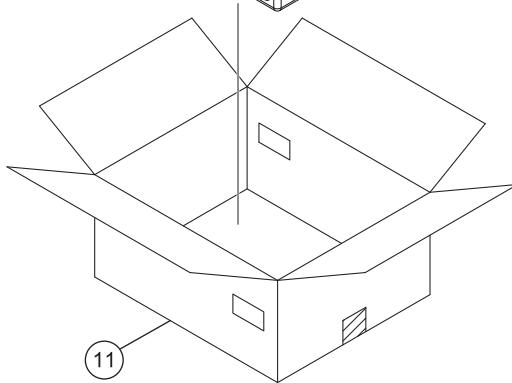
B



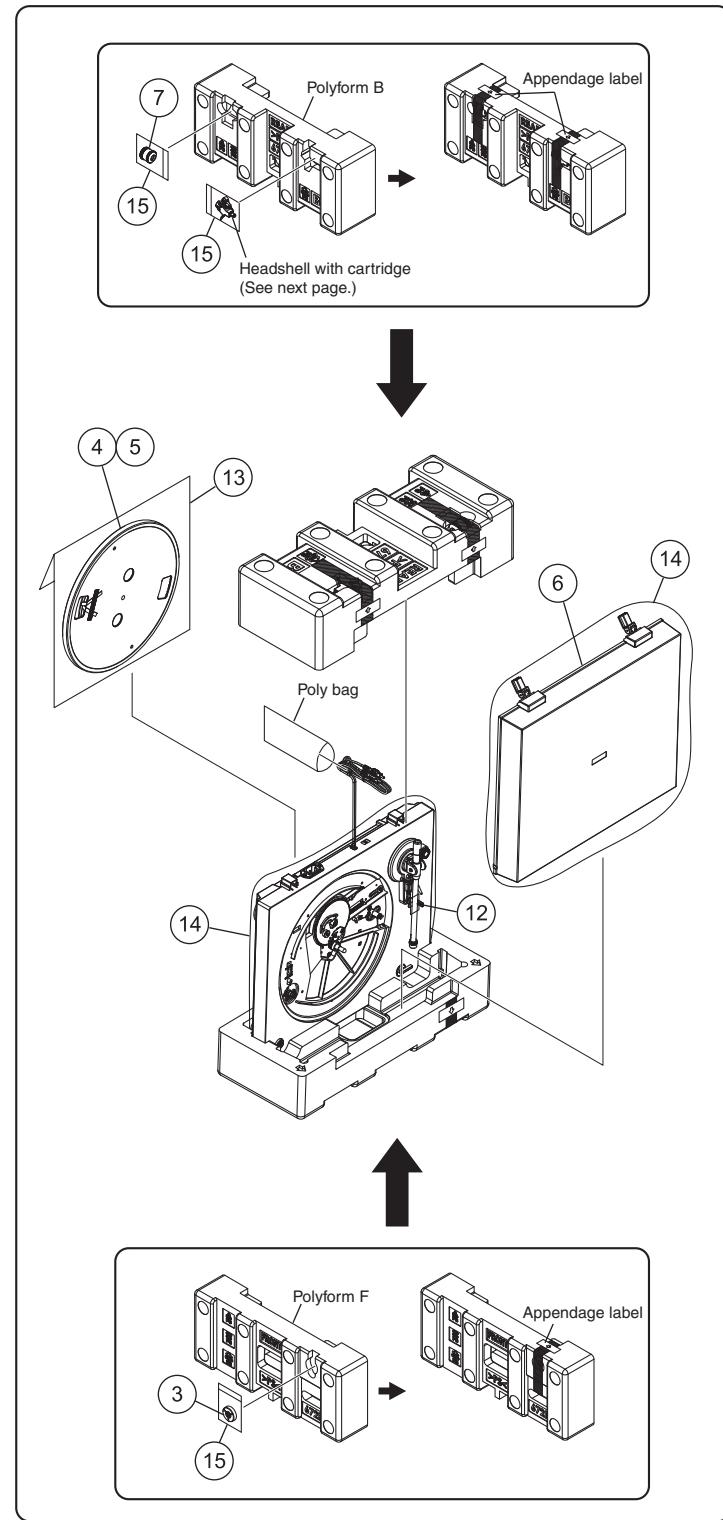
C



D

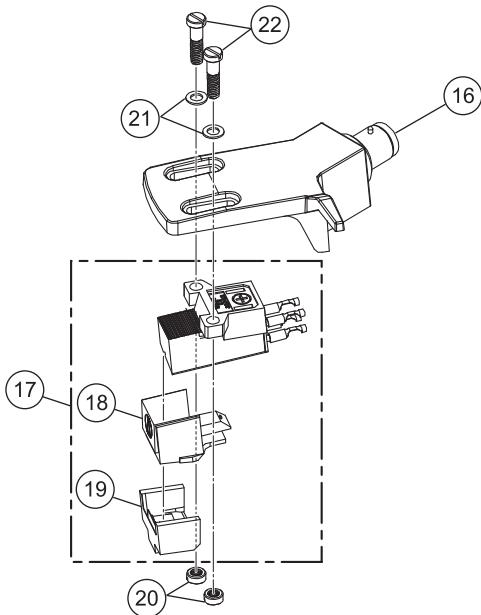


E



F

■ Headshell with cartridge



(1) PACKING SECTION PARTS LIST

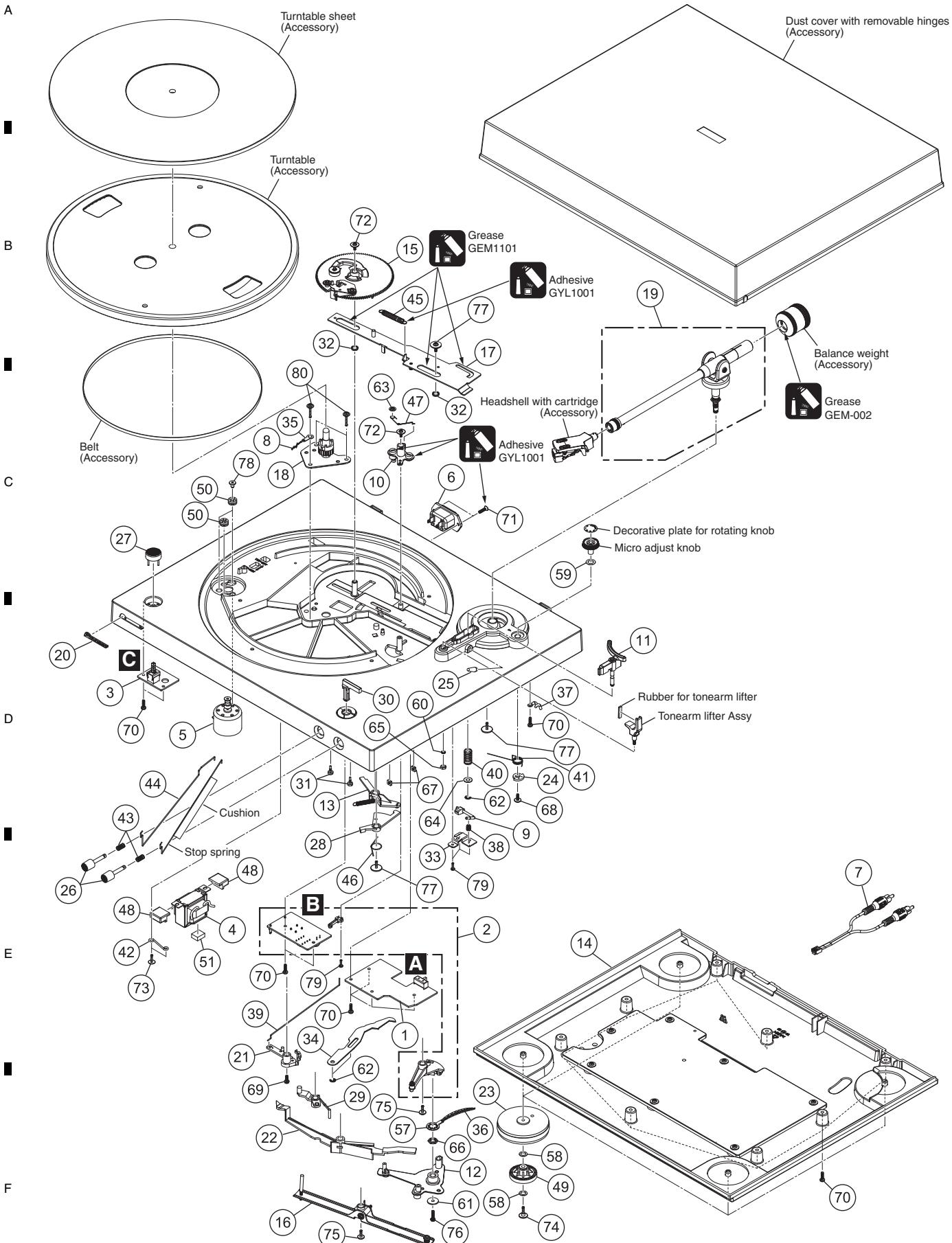
Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ 1	Power Cord	See Contrast table (2)	11	Gift Box	See Contrast table (2)
2	Spare Lead Wires	704-30-B034	12	Soft Sheet (40 * 40 mm, T = 0.4 mm)	509-1000-345
3	Adapter for EP Record	100-H910-264	13	Soft Bag (325 * 360 + 30 mm)	509-700-263
4	Turntable	200-F703-203	14	Soft Bag (530 * 480 mm)	509-PL30-343
5	Belt	604-PXE90-076	15	Polybag (60 * 102 mm)	505-B300-007
6	Dust Cover with Removable Hinges	701-PL30-5537	16	Headshell Assy	703-PL30-1427
7	Balance Weight	702-PL30-087	17	1..Cartridge (CARTRIDGE AT3600L)	402-H468-004
8	Turntable Sheet	705-PL30-1581	18	2..Stylus	421-H468-027
9	Operating Instructions	See Contrast table (2)	19	2..Stylus Cover	PZP1002
NSP 10	Warranty Card	See Contrast table (2)	20	Nut	601-M26P045-031
			21	Washer for Stylus	606-STYLUS-229A
			22	Screw for Stylus	602-M2610-596

(2) CONTRAST TABLE

PL-30-K/CUXESM and SYXE8 are constructed the same except for the following:

Mark	No.	Symbol and Description	PL-30-K /CUXESM	PL-30-K /SYXE8
⚠	1	Power Cord	409-30-233	409-30-234
	9	Operating Instructions (En, Fr, Es)	502-PL30KA-3431	Not used
	9	Operating Instructions (En, Fr, De, It, Ne, Es, Ru)	Not used	502-PL30KB-3432A
NSP	10	Warranty Card	Not used	502-DM250B-3145B
	11	Gift Box	507-PL30-3494	507-PL30B-3494A

9.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	PH/LI PCB Assy	704-30K-B071	41	Micro Adjust Spring	603-300-344
2	COMMUTATION PCB & SW Assy	704-30K-B074	42	Transformer Plate	603-300-347
3	33/45 RPM PCB Assy	704-30K-B072	43	Play/Stop Knob Spring	603-300-351
⚠ 4	Transformer	See Contrast table (2)	44	Play Spring	603-PL30-409
5	Motor Assy	704-F706-7303	45	Spring	603-SL24F-067
⚠ 6	2P AC Jack	420-30-420	46	Spring	603-SL24F-068
7	RCA Cord (L = 1200 mm)	408-HPR200-092	47	Spring	603-SL24F-069
8	1P Lead Wire (L = 190 mm)	406-K769-130	48	Cushion Rubber For Transformer	604-300-365
9	Handle Assy	701-1000-5466	49	Rubber	604-SL24F-036A
10	Select Plate Assy	701-1000-5467	50	Motor Plastic Cushion	604-SL24F-038
11	Lifter Assy	701-1000-5483	51	Cushion	604-PL30-658
12	Speed Braker Assy	701-300-3629	52	•••••	
13	Small Pendulum & Spring Assy	701-300-3668	53	•••••	
14	Bottom Board & Plate Assy	See Contrast table (2)	54	•••••	
15	Gear Assy	701-SL24F-192-HA	55	•••••	
16	Locus Shaft Assy	703-300-1011	56	•••••	
17	Pole Assy	703-300-992	57	Washer	300-300-1395
18	Center & Pinion Assy	703-F703-253	58	Washer	606-300-220
19	Tone Arm Assy	704-PL30-A992	59	Washer	606-B300-032
20	Pioneer Badge	BAM1004	60	Washer	606-B300-039
21	Selector	100-1000-3170	61	Washer	606-F200-006
22	Speed Support	100-300-2398	62	E-Ring Washer 3 mm	606-F200-011-HA
23	Foot	100-300-332	63	CS Washer (3 mm)	606-F200-013
24	Micro Adjust Lever	100-B300-118	64	Washer	606-H200-019
25	Clutch Lever Knob	100-DJ3000-1313	65	Nut	601-A100-004-HA
26	Play/Stop Knob	100-PL30-3176	66	Nut	601-SL24F-011
27	33/45 Knob	100-PL30-3177	67	Nut	601-TD203-050
28	Pendulum (L)	100-SL24F-234	68	Screw	602-B600-056
29	Pendulum (M)	100-SL24F-235	69	Screw	602-B600-057-HA
30	Select Record Knob	100-SL24F-236	70	Screw	602-B600-072-HA
31	Sleeve	200-300-490	71	Screw	602-CDMIX1A1-302
32	Copper Washer	200-SL24F-117A	72	Screw	602-DV300-5023
33	Fixed Plate	300-1000-2178	73	Screw	602-M400-055
34	Control Plate	300-300-1355	74	Screw	602-SL24F-092
35	Grounding Shield	300-F202-001	75	Screw	602-SL24F-094
36	Grounding Metal Net (L = 130 mm)	407-DJ1900-094	76	Screw	602-SL24F-095
37	Locking Cable Clip	504-HV3500K-033	77	Screw	602-SL24F-097
38	Spring	603-1000-407	78	Screw	602-SL24F-098
39	Spring (Record Selector)	603-1000-408	79	Screw	602-SL24F-099-HA
40	Lifter Spring	603-300-343	80	Screw	602-B600-059

(2) CONTRAST TABLE

PL-30-K/CUXESM and SYXE8 are constructed the same except for the following:

Mark	No.	Symbol and Description	PL-30-K /CUXESM	PL-30-K /SYXE8
⚠ 4	Transformer		411-30-937	411-30-938
14	Bottom Board & Plate Assy		701-PL30KA-5485	701-PL30KB-5485

10. SCHEMATIC DIAGRAM

A

B

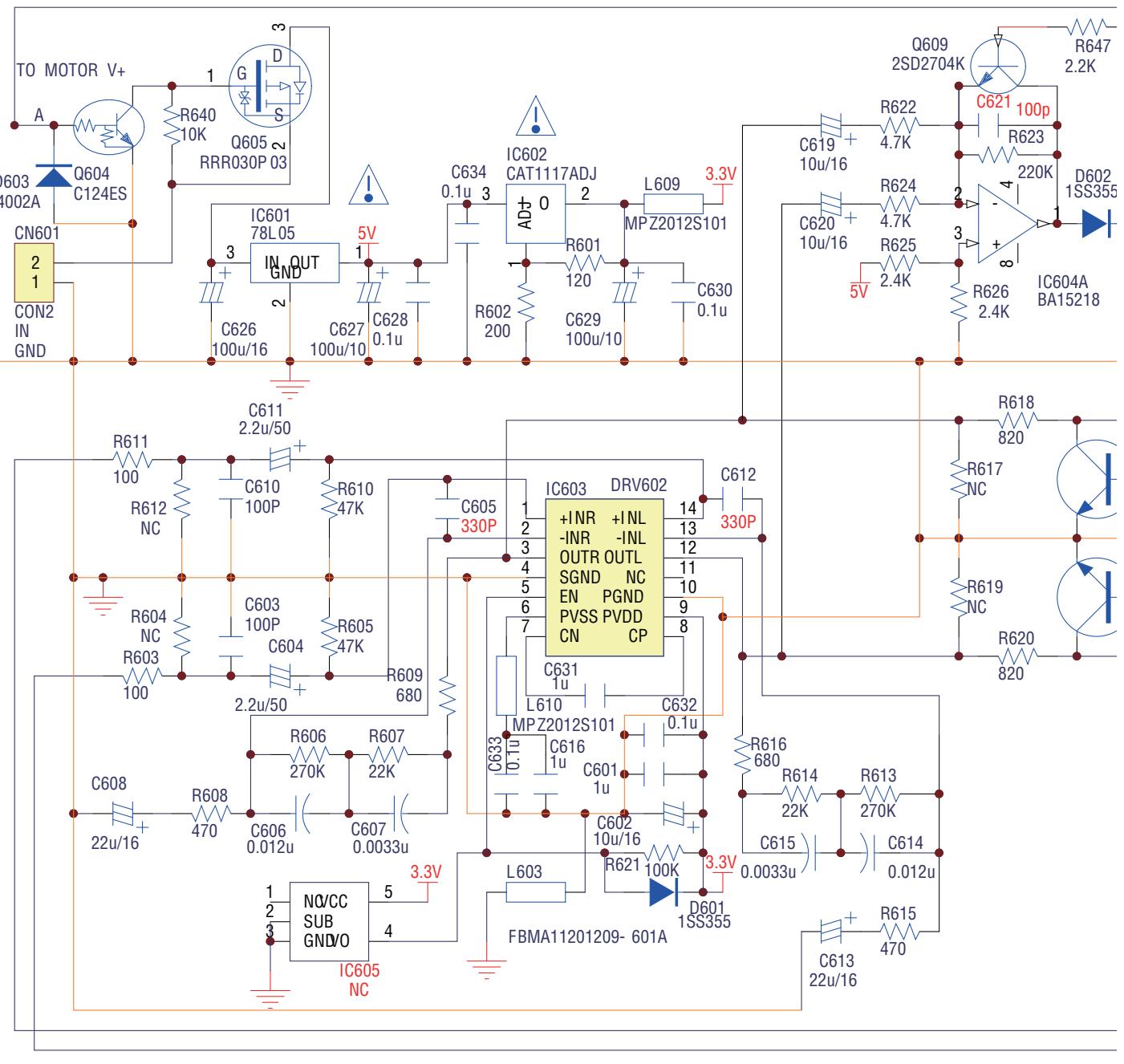
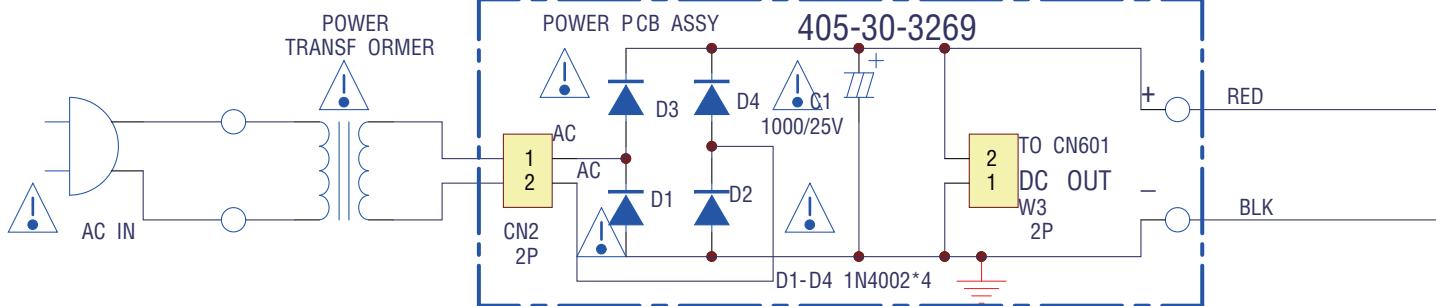
C

1

1

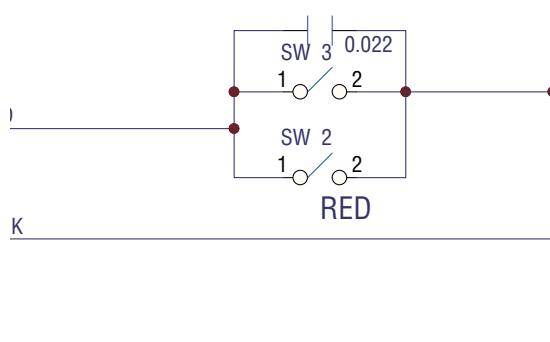
1

B COMMUTATION PCB & SW ASSY (704-30K-B074)



A B

4)



C 33/45 RPM PCB ASSY (704-30K-B072)

SPEED SELECT SW
405-30-3270

Circuit Components and Labels:

- Input Stages (Left):** Two stages using Q603 (2SD2704K) op-amps. Each stage has a feedback resistor (R637, R636, R638) and a bias resistor (R618, R620, R635). The outputs are labeled R and L.
- Switchable MM/MM Phono Input (Center):** A 5-position switch (SW601) with positions: WHITE, BLUE, GREEN, RED, and BLK. The MM position is connected to the R input. The phono position is connected to the LINE position through a switch (JR13).
- Switchable Phono/Line Input (Center):** A 3PDT switch (SW601) with positions: PHONO, LINE, and SW601. The PHONO position is connected to the R input. The LINE position is connected to the R input through a switch (JR13).
- Output Stage (Right):** A 3PDT switch (CN602) with three output paths labeled 1, 2, and 3. The outputs are labeled PH/LI and OUTPUT.
- Other Components:** Various resistors (R635, R636, R637, R638, R618, R620, R617, R619) and capacitors (C617, C618, C619, C624, C625) are shown throughout the circuit.

40-30-3268

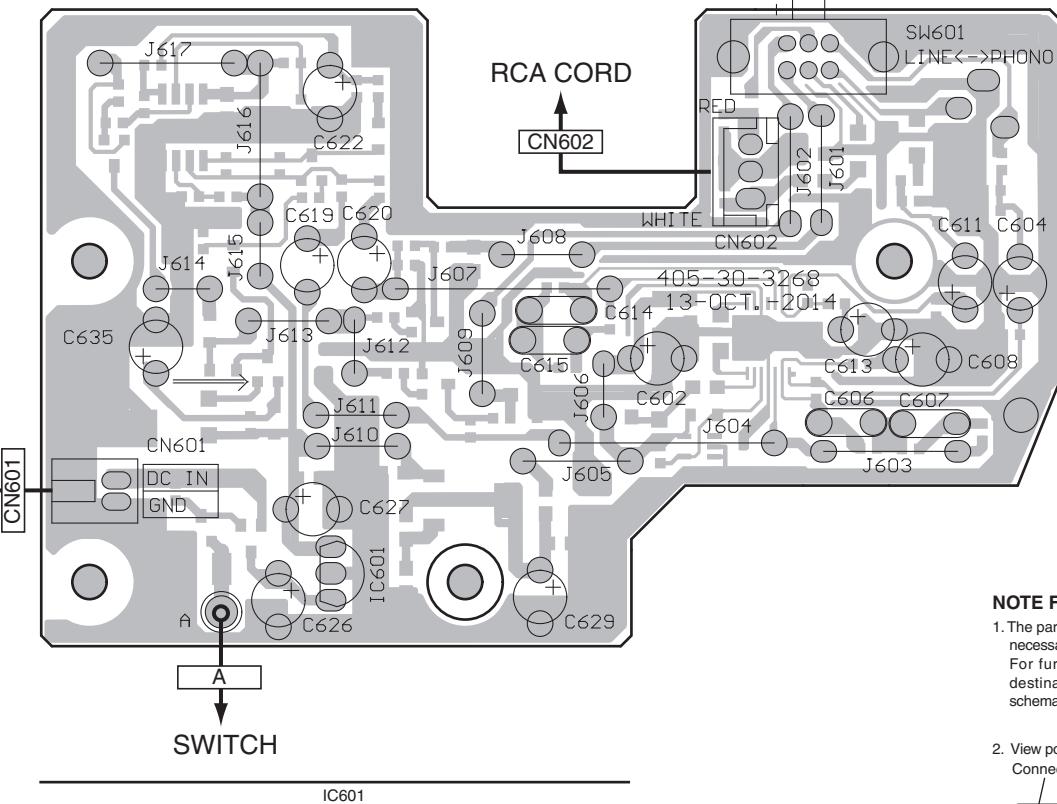
A PH/LI PCB ASSY (704-30K-B071)

11. PCB CONNECTION DIAGRAM

A **SIDE A**

SIDE A

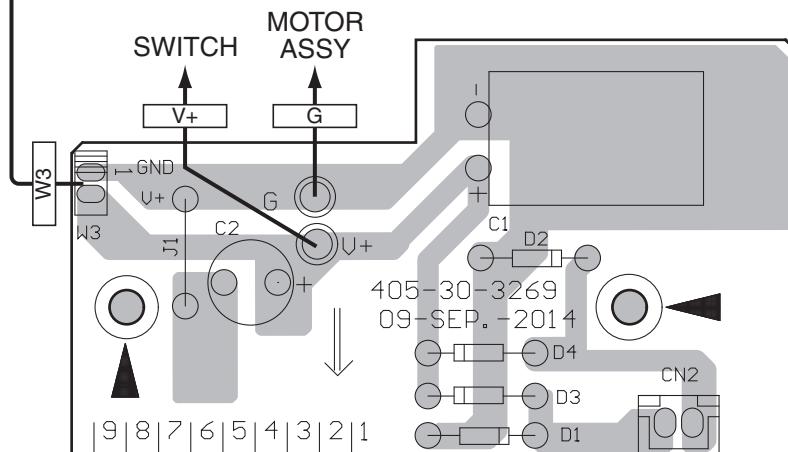
A PH/LI PCB ASSY



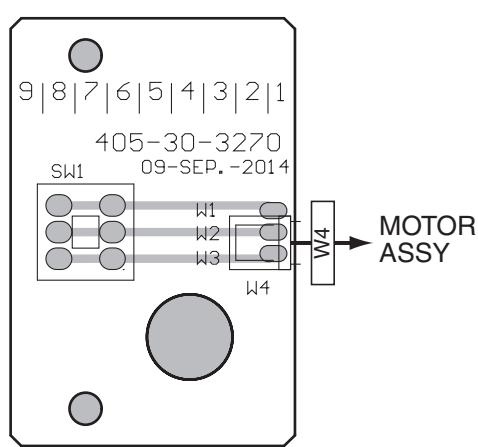
NOTE FOR PCB DIAGRAMS :

1. The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

2. View point of PCB diagrams.
 Connector
 Capacitor
 P.C. Board
 Chip Part
SIDE A **SIDE B**



B COMMUTATION PCB & SW ASSY



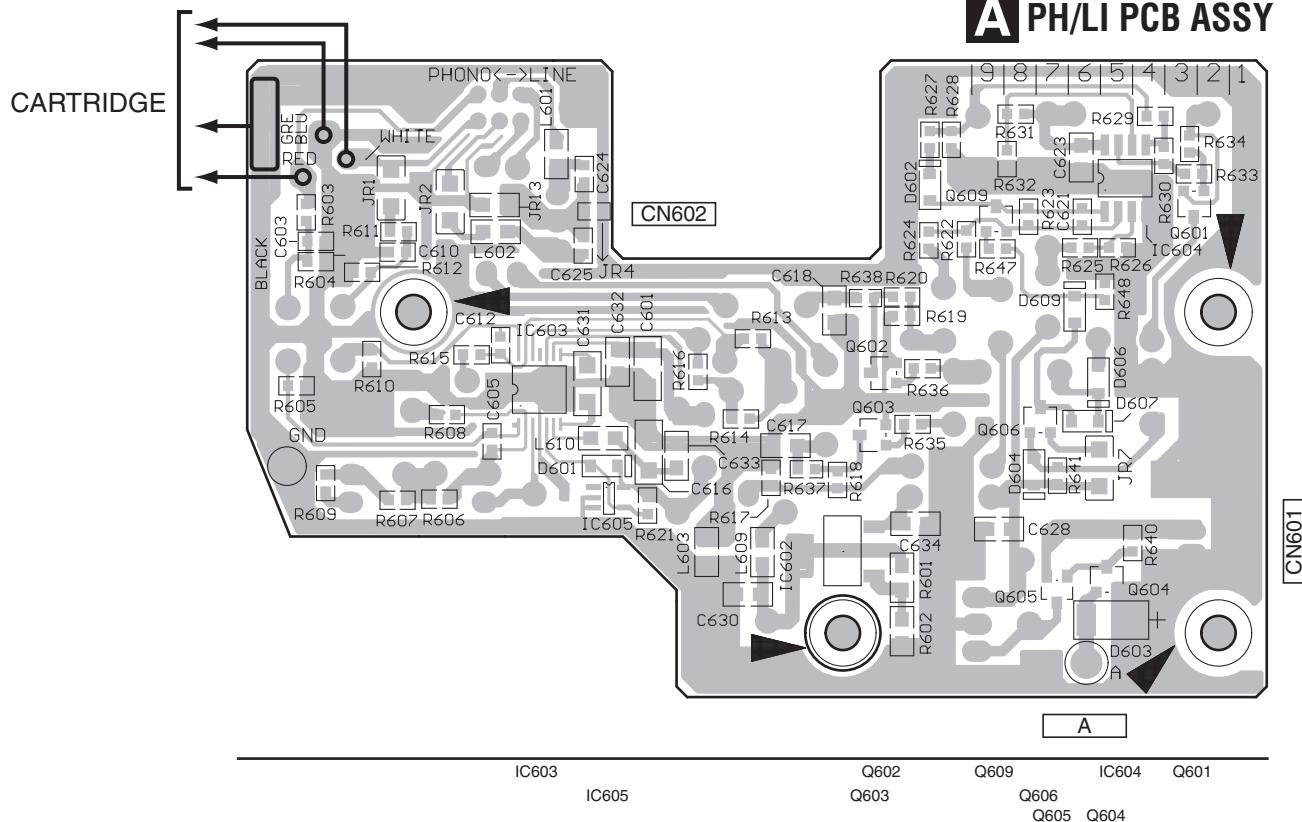
C 33/45 RPM PCB ASSY

A B C

SIDE B

SIDE B

A PH/LI PCB ASSY



1

1

1

1

C 33/45 RPM PCB ASSY

CN2

B COMMUTATION PCB & SW ASSY

1

5

6

—

8

PL-30-K

A B C

21